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# SKETCH

ON

# CANNES AND ITS CLIMATE

BY

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## INTRODUCTION

At the present time, distances are passed over with so much celerity and comfort, that the number of tourists, who visit foreign countries for the purpose of either amusing or instructing themselves is immense; while the number of invalids resorting to the south of France or Italy to escape the severities of a northern winter increases every year.

Since the publication of my work upon « The climate of winter residence in the south of France, » I have revisited each of those residences and examined the Italian coast as far as Leghorn, stoping particularly at Bordighera, San-Remo and Pisa, in order to verify the cor-

rectness of my first conclusions and to form as exact an opinion as possible of the climatic value of each station.

After having passed five winters at the different French stations, and having spent more or less time in those of northern Italy, I established myself at Cannes. The choice was made because this locality possesses three essential conditions : 1<sup>st</sup> a shelter from land winds, formed by a continuous amphitheatre of hills and mountains facing directly south; 2<sup>d</sup> the absence of any torrent whose broad and gravelly bed generally dry and hot in the sun, would be the cause of a constant currant of air; 3<sup>d</sup> the possibility of placing the sick, according to indications either directly upon the sea side, or so far from the beach as to be beyond the influence of the sea breeze. This last point is one of special importance.

Before examining in detail the climate of Cannes, let us consider first what the sick have to gain by coming to live during the winter in the south of France. I do not hesitate to affirm.

that a residence in a warm climate is a powerful means for preventing or combatting pulmonary consumption, scrofula, rhumatism and in general, all affections occasioned or continued by cold and moisture.

The remarkable publications, which within a few years past have appeared upon consumption, have shown very clearly that this terrible disease results from a profound disturbance of nutrition. Over-crowding want of light, humidity, over-work, insufficient or irregular nourishment, want of exercise, grief, abuse of pleasure, such are the productive causes according to M. Bonchardat, of that *physiological poverty* which is the result of an excess of waste and an insufficiency of repair. Physiological poverty produces consumption not only among men, but also among animals.

« I see in phthisis simply one of those morbid changes which represent a special condition of the constitution » (Graves).

« Tubercl<sup>e</sup> is always a feeble growth, a miserable neoplast from the beginning » (Virchow).

« Consumption is essentially a malady of nutrition » (Turnbill).

« I add, » says Jaccoud, « that that perversion of nutrition may be primitive and accidental (*phthisie acquise*), or consecutive upon a preexisting constitutional malady (*phthisie scrofuluse*). We are able to retard, if not prevent the genesis of tubercles in persons predisposed; by preventing in them so far as possible the development of inflammatory affections of the broncho-pulmonary apparatus. Such is the practical application of the new facts of patho-gensis. »

« Consumption is cured more frequently than is supposed. Its course is not uniforme, in a great many cases it is interrupted. The truces which so frequently succeed the first attacks of the disease may be made final, or may be indefinitely prolonged; not only can consumption be cured, but it can be cured at any stage » (A. Gueneau de Mussy).

These citations are sufficient, I think, to show the position of medical science as well as the

opinion of some of the principal practitioners as to the nature and curability of pulmonary consumption.

The resources of hygiene should be employed to prevent the development of tubercles or to check the new manifestations of the diathesis; while therapeutic means, should be reserved for combating the inflammatory symptoms, which are associated with tubercles at the period of their evolution. But the resources of hygiene are decidedly insufficient during the winter in cold climates, since the purity of the air, the light, and warmth of the sun, for which there can be no substitutes, are wanting.

The air is the most important of the aliments, it is also in consumption the most effective medicine; it not only furnishes materials necessary to the formation of the blood, but it also introduces into the blood absorbable substances for which it serves as a vehicle, it exercises moreover a direct action upon the respiratory mucous membrane; and when we remember that we respire from fifteen to twenty times a mi-

nute, and that each inspiration introduces into the lungs about thirty cubic inches of air, we may understand the power of this agent.

Scrofula and consumption are much more frequent among the poorer, than among the better conditioned classes, since the causes of *physiological poverty* exist more frequently among the former; the course also of consumption is rapid and it is seldom cured, from want of the means to correct a perverted nutrition and to over come that special constitutional condition which, leads to the production of tubercule.

When the disease is confirmed; it progresses with frightful rapidity among those unfortunates who are forced to take refuge in hospitals; for what ever improvements may be introduced into these establishments, the air will necessarily be vitiated in a room occupied by several patients. The warmth of the stove is no substitute for that of the sun, nor the walk in the court for one in the country. In the North, certain unhealthy conditions may be remedied for the rich man; but not all; during the winter, the light and

warmth of the sun is wanting as well as atmospheric purity; forced to remain in doors during several months he is poisoned by his own respiration. In the South on the contrary, he can walk out of doors in the country almost every day, while the windows of his room are opened for several hours giving access to a pure air as well as the vivifying rays of the sun.

One can understand how under such conditions a real and lasting amelioration can be produced; the work of tuberculisation will be checked, the morbid growth in place of softening will change its character; little by little saline particles will be substituted for the fatty, and the tubercule will become a chalky mass. In this event the proportion between the organic and inorganic elements is according to Lombard and Thénard as 4 to 96, whilst recent tubercule is composed of 98 parts of animal matter and but 2 of saline. In undergoing the chalky transformation, tubercule having become inorganic, remains definitely quiet and gives rise by its presence to no inflammation, so that if too large an

extent of the lungs is not attacked, respiration is easily effected, The consumptive finally cured can return home and resume his occupation avoiding however with the greatest care a relapse into the condition of *physiological poverty*, which gave rise in the first instance to the genesis of the tubercles. If on the other hand, the difficulty has been so grave as to affect a considerable portion of the lungs, as all that part which has been the seat of tubercles, transformed later into cretaceous deposits, remains for ever incapable of aiding in respiration, it may be that the healthy portion of the pulmonary tissue is only just sufficient for the processes of blood change and that it can not be reduced to a smaller volume without gravely compromising life. In this case, the cured consumptive should submit to the necessity of avoiding with the greatest care every thing which may give rise to chills, and should pass the winters in the South, that his respiratory apparatus may not be called upon to perform more than it can accomplish.

A change of residence to the South of France

is useless and ever dangerous for the patient who is unwilling to adopt the habits of life which alone can accomplish the desired result ; yet it is frequently very difficult for the physician to cause the importance of this subject to be realised. « The preservation of the health by an excessive care, » says Laroche Foucauld, « is itself a wearysome disease. » Nevertheless no remedies can take the place of certain hygienic measures.

The first question to determine is, that of locality; it is better that one patient should be placed by the seaside, while in the case of another the calm and balsamic air of the hills is indicated; but all should choose a residence comfortable and facing toward the south. The choice of the daily walk should be determined by the direction of the wind, in order to shun, as it is always easy to do, those which might injure the health. The patient should return home before sun down. The clothing should be suitable to the temperature, as well as prepared for the differences of temperature between the sun shine and the shade.

These sufficiently minute and constant precautions, appear at first irksome and almost superfluous to new comers; it is frequently at their cost, that they learn to recognise the importance of them after contracting colds by imprudences, if they do not make up their minds from the first to adopt a habit of life, which it is really easy to do, the more so, since Cannes now offers in addition to the charms of a country life in the presence of the most beautiful natural scenery, the material and intellectual resources of a great city.

A residence in the south of France should commence in October and be continued until May; it is very important not to leave until after the reaccessions of cold which annually come in March and April.

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## TOPOGRAPHY

Few places have grown more rapidly than the little city of Cannes; within fifteen years, its population has doubled. While Nice enjoyed during the past century a reputation on account of its climate which attracted to it, visitors from every part of the world, its humble neighbour was quite ignored. It so happened that in 1834 lord Brougham passing through Cannes on his way to Nice was struck by the rich vegetation and the charming appearance of the country; after having examined the neighborhood, he caused a *château* to be built in the midst of a beautiful grove of orange trees. — His example was imitated by others, and the reputation of Cannes was established. I visited the locality for the first time in 1853, at that time there were few

invalids and still fewer tourists. The number of strangers coming from every northern country, has since increased very considerably from year to year, especially since the opening of the railway.

— At present, leaving Paris at 7,15 P. M., you arrive at Cannes the next day at 5,15 P. M. The passage is effected without changing cars.

The prosperity of Cannes, is to be attributed to the climate. « We have in France, » said Dr Amédée Latour in 1857, « certain localities which enjoy during the winter a temperature so mild and uniform that the sick have no need of exposing themselves to distant voyages. I prefer above all others that of Cannes. » Dr Champouillon wrote at the same time: « As regards the purity, the beauty of the sky and the dryness of the atmosphere the basin of Cannes has no rival upon the European shores of the Mediterranean. It seems indeed as if this place has been expressly created for consumptives and the scrofulous. »

The topography of the country explains its superiority. The mountain range of the Esterel

above all in offering a barrier to the Mistral, affords one of the principal advantages of this locality.

These mountains present a remarkable structure and conformation; separated by a narrow valley from the chain of the Alps they form a rocky buttress of elliptical shape whose great diametre points North and South; its northern slope faces the Alps, its southern descends to the waters of the Mediterranean. On the west, the Esterel bounds the valley of Argens and the canton of Fréjus; on the east, the plain of Laval separates it from the hills of Cannes. This mountain chain embraces a territory of 108 square miles (12 miles north and south, by 9 east and west). The average height of the peaks which compose it, is from 15 to 1,800 feet, the highest point has an altitude of over 4,000 feet. Its structure is granitic, while that of the neighboring Alps is calcarious. The traveler coming from Fréjus after having crossed the Esterel, meets with the river Siagne which fertilises the plain of Laval. The Alps lie to the north, distant 7 miles, the wind which pas-

ses over their snowy summits, comes unobstructed to lower the temperature of the plain, so that the mulberries of one side and the umbrella pines of the other, with a few olives, are almost the only trees in this spot which recall the climate of Provence. When following the high way which runs parallel with the water course, the first hills of Cannes are gained, an entirely different vegetation is observed, the pasture land disappears to give place to olive groves, to orange trees, to palms, and to a thousand other plants peculiar to warm countries. The hills leave between them and the sea only a narrow strip of land occupied today throughout almost its whole length by villas.

The city of Cannes (latitude  $43^{\circ} 34$ , longitude  $7^{\circ} 06$ ) has a southern exposure upon the shore of the Mediterranean. The old quarter called the Sucquet, is built upon the side of Mont Chevalier. This hill whose summit is occupied by the parish church inclines towards the north and the green hills which form the circumference of a semi-circular amphitheatre, with a radius

of from one to three miles, at the bottom of which is the village of Cannet; these hills again approaching towards the sea form the last bulwark of Cannes on the east. The road which leads to Antibes and Nice passes by their feet; for more than two miles it is bordered with villas, so that there is an unbroken line of country houses for more than five miles, half on the west of Cannes on the Fréjus road, half on the east toward Antibes, moreover both north and south the roads leading to Grasse, and those of Cannet, Cannet it self, and the surrounding hills, are covered with beautiful dwellings recently constructed.

Between Cannes and Antibes facing the gulf of Juan, where the first Napoleon disembarked on his return from Elba, a second amphitheatre of hills, opened to the south and perfectly sheltered, has begun to receive numerous residents during the winter.

South of Cannes, in front of the harbor, may be seen the Lerin islands: Sainte-Marguerite and Saint-Honorat, two miles off. The first is four mi-

les in circumference. Here is, the forteress where the man with the iron mask was imprisoned during the reign of Louis the XIV; here also is a great forest full of game and the garden of a manor which is regarded as the warmest point in Provence.

The island Saint-Honorat separated from Sainte-Marguerite by a canal 850 yards broad is smaller than its neighbour, but its historic souvenirs, its picturesque sites and the ruins of its celebrated monastery make it a place curious as well as interesting to visit.

There is no better place than the terrace of the chateau of Sainte-Marguerite, from which to get a general view of the country. Turning towards Provence, in front is the shore and town of Cannes, the village of Cannet, the hills of these two communes covered with a luxuriant vegetation to the summit, the Alps in all their splendor, more or less covered with a snowy mantle : on the left, the Esterel and its vast forests; on the right, the cape of the Croisette, that of Antibes, the shore of Nice, and the mountain of Villafranca. Few

spectacles are grander and more varied than this vast assemblage of mountains, hills and shores, to which the purity of the sky and the mildness of the temperature lend a magic splendor.

The beach at Cannes is one of the finest on the Mediterranean; it is sandy, with a gentle slope and unaffected by marine currents, circumstances which make it an excellent spot for sea bathing, as well as for those sand baths which lately have been used with great success in the treatment of chronic rheumatism and certain forms of paralysis.

It does not come within my plan to describe the many beautiful walks which the environs of Cannes afford, this has already been done in a most interesting way in a work recently published by M. Victor Petit. I will only mention some of them.

Taking the city as a point of departure we have : 1<sup>st</sup> On the south : the sea, the Lérins islands and the gulf of Cannes forming almost an arc of a circle, whose two extremities are on the east, cape Croisette, and on the west, cape Roux.

2<sup>d</sup>. On the east : the shore that may be traversed in a carriage as far as cape Croisette presenting a concavity towards the sea facing the south east, so that cape Croisette is the part of the coast nearest the Lerins islands. The highway to Italy and the railway run parallel to the shore as they traverse the city, and approach nearer and nearer the sea for quite two miles beyond Cannes, thence the two ways skirt the sea side hemmed in between the hills of Vallauris on the one side and the sea on the other. The highway leads to the gulf of Juan (3 miles), to Vallauris (4 miles), to the city and cape of Antibes (6 miles), to the valley of the Loup, to Biot and Villeneuve (8 or 9 miles). By the railway, Var and Nice can be gained in less than an hour. The bay of Villafranca and Saint-Hospice is distant from Nice only three or four miles.

3<sup>d</sup>. On the north : we find successively the village of Cannet (distant 3 miles), the summit of the amphitheatre of hills protecting the canton of Cannes (2 to 4 miles), the village of Vallauris lying behind the north east portion of this am-

phitheatre (4 miles), the highway from Grasse and the Alps passing by Mougins, Monans (5 miles), Saint-Vallier (18 miles).

4<sup>th</sup>. On the west : the imperial road for more than two miles is bordered by villas, on the one side backed up against the hills, on the other extending down to the shore. In quitting the region of the hills in order to gain the plain of Laval, one ought to take the fine road which, leaving the imperial road at right angles, runs northward to Pegomas and Auribeau (5 miles), to join the road from Draguignan to Grasse near this last city (8 miles) and to reach Saint-Cézaire (17 miles) and its stalactic grottos. If instead of going north, the imperial road is followed one may traverse the whole breadth of the plain of Laval, leaving on the left the hermitage and the mound of Saint-Cassien (3 miles) and may cross the Siagne over a suspension bridge (4 miles); thence the landscape becomes grander and more severe. The ascent of the Esterel begins near the bifurcation of the road leading to Naponle (7 miles). One may cross the rivulet Argentière and finally

entering into the mountain gain the hostelry of the Esterel (10 miles), and thence Fréjus. — Unless leaving the road at the summit of the ascent, a descent should be made into one of the three vallées, the Vaux, the Madeleine, or the Reyran (13 miles), or continuing to ascend the wooded slopes of mount Vinaigre, the highest point of these mountains is gained.

There is another way of reaching the Esterel by taking the railway, whose direction is at first uniform in crossing the plain of Laval, afterwards very uneven as soon as the mountains are attained where the railroad has been cut through the porphyritic mass which extends as far as the sea and forms cape Roux, the best rampart of Cannes against the Mistral; the first station of the railway is Agay, the second Saint-Raphaël a little port of the city of Fréjus. This journey is effected in an hour by rail.

Several of the sites I have just mentioned are easy of access and at such a distance that they can readily be made the object of a short promenade, but there are others more distant which

require sufficiently fatiguing excursions and demand the whole day.

One of the following points can be visited in an afternoon :

Promenade of the boulevard de l'Impératrice, cape Croisette, church Notre-Dame des pins.

Road to Antibes, gulf Juan, village of Vallauris celebrated for its manufacture of pottery.

City of Antibes, promenades of the cape.

Boulevard du Cannet, village of Cannet, view from the square Mercier-Lacombe, return by the road to Grasse.

Chapel Saint-Antoine, admirable view on the Gulf of Napoule and the bay of Nice, summit of the hills of Cannes, promenade around the great pine-tree.

Village of Mougins; panorama of all the country seen from the steeple of the church.

The citadel and the forest of the island of Sainte-Marguerite.

The monastery and island Saint-Honorat.

Excursion to the Croix des Gardes and to the pine-wood situated north of Eleanor castle.

The race-course, the Pinède, the park of Fons-Michel.

Hill and hermitage of Saint-Cassien ; the suspension bridge on the river Siagne, the ruins of the castle of Napoule.

The mills of Abbadie and the picturesque village of Auribeau.

The city of Grasse, going by Mouans, returning by Pegomas.

— Excursions demanding a day :

From Cannes to Antibes, returning by Mougins.

From Cannes to Vallauris and Vallebonne, returning by Mougins.

From Cannes to Mougins and returning by Antibes.

From Cannes to Grasse, the Bar and returning by Vallebonne.

Road from Cannes to Fréjus to the relay of the Esterel, ascent of Mount Vinaigre, or visit to the mines of Vaux and of the Madeleine (lignite and bitumous schist).

The roadstead of Agay, the semaphore of Draimond, the porphyry quarries of the Romans.

The Roman ruins of Fréjus, the mine of Boson (bituminous schist).

— Excursions demanding one long day or two days :

From Cannes to Cagnes, Vence, visiting the « Saut du Loup, » returning by le Bar and Grasse.

Saint-Vallier, the pont à Dieu, natural bridge over the river Siagne.

Saint-Cézaire, magnificent grottes of stalactites; Point of departure of the Canal Siagne.

The perte de l'Argens, a river near the railway station of Vidauban.

I shall not speak here of the more distant excursions; such as Saint-Tropez, the Maures mountains, the abbey of Laverne, the Sainte Baume, and in another direction the valley of Tinée, that of Vésubie, the baths of Berthemont and those of Saint-Dalmas.

This list is very incomplete, but it suffices to

show that the country offers everywhere admirable sites and in travelling over it, we become soon convinced that this little corner of the earth, already so favored in respects to its climate by its geographical situation and the configuration of the mountains which protect it, is perhaps still more remarkable, on account of its vegetation and the geological character of the soil on which it reposes.

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## VEGETATION

The vegetation of a country is the surest criterion for appreciating its climate, at first sight and in a sufficiently exact manner. Now, it is impossible for the inhabitant of the North, arriving at Cannes, whether he turns his steps in the direction of the mountains of the Esterel, the hills of Cannet, the fields or gardens of Cannes, not to be struck with the immense difference which exists between the flora of this district and that of the rest of France.

The mountains of the Esterel are covered in the greatest part of their extent with forests of sea-pines and thickets of rock-roses, *lentiscus*, laurustines, *arbutus*, rushbrooms and arborescent heaths. These heaths are remarkably fine, attain a height of 6 or 10 feet and flower in

March, the laurustines in February and March, the rock-roses in March, April and May, the rush-brooms in May and June; these tufted groves extend to the Mediterranean and afford delightful promenades. The sea-pines are rarely full-grown trees, because frequent fires devastate periodically the forests of the Esterel; during the summer it rains very seldom so that the herbs and branches become so dry that the least spark suffices to ignite them. The most memorable of these fires occurred about twenty years ago, it lasted during six weeks and reduced to cinders the forests of Tanneron and cape Roux; fortunately the mouldy earth renews itself easily wherever there is any schistose clay, and the pines, rock-roses and heaths recover rapidly the soil.

The holly oak and especially the cork-tree are abundant in the mountains of the Esterel and the Maures; the cork-tree is very productive; a single proprietor told us that he realized in cork twenty thousand francs annually.

In the valleys, are some pasture-lands and corn-fields; the same may be found in the en-

virons of Adrets. The inn of the Esterel is surrounded by walnut-trees, pear-trees, cherry-trees and more than one magnificent forest of full-grown chestnut-trees having at their feet strawberry-bushes.

Some miles farther, at Luc, the chestnut-trees form the object of an important commerce, their fruit known at Paris by the name of « marrons de Lyon, » has an undisputed reputation of superiority.

The plain of Laval is covered with beautiful pasturages, so much the more valuable as the plants fit for forage, are rare in the south ; the sandy soil of the shore nourishes superb umbrella pines which recall those in the vicinity of Rome and are often reproduced by painters in their pictures.

The hills of Cannes, Cannet and Vallauris are clothed at their summits with pines of Alep, and at their bases with secular olive-trees which cover at least half of the tillable soil, the rest is occupied by cereals (little abundant and insufficient to support the population), vines, fig-trees, almond-

trees, peach-trees, jujube-trees, orange-trees, lemon-trees, and odoriferous plants. The olives and pomegranates grow without cultivation.

The culture of vegetables, principally for an early market assumes a great importance in the district of the Croisette; thus in the months of December, January and February are obtained in sheltered positions potaoes, green-peas, tomatoes, artichokes, etc.

The thousands of orange-trees which are cultivated on the territory of CANNET constitute the principal element of the wealth of this village. It is seldom that the thermometer descends low enough to injure the vegetation of the country. The winters noted as vigorous are those of the years 1709, 1716, 1789, 1820, 1828. In 1709 the orange-trees and a great number of the olive-trees perished, others were cut down and sprang up again; in 1716, the cold was less severe; in 1789, the olive-trees did not require cutting, but pruning; many orange-trees perished but not all; the winter of 1820 which

was fatal to all Languedoc and a part of Provence did no harm to the olive-trees of Cannes, but necessitated the trimming down of a certain number of orange-trees; as to the winter of 1828 it occasioned almost no damage. Since then the winters have injured only the sickly trees; those which are never watered suffer in summer; at the first rains of autumn the sap rises so much the earlier as they are least vigorous and are thus in a bad condition to support a diminution of temperature.

The following are some examples of trees of fine growth, which I have noticed in my rambles: not one of them has any reputation in the country, and consequently they are not extraordinary specimens: olive-tree near the hamlet of Sainte-Catherine, circumference of the trunk eleven feet — fig-tree near the road conducting from Cannet to the high-way of Grasse, circumference of the trunk; five feet — near by, *laurus nobilis*, circumference: two feet and half; height about twenty three feet — orange-tree at the entrance of Cannet, circumference of the trunk: five

feet; it resisted the winter of 1789; its trunk is hollow like those of the old chestnut-trees of the North. — Orange-tree near Notre-Dame-des-Anges; height of the trunk to the first branches, eight feet.

The orange-trees do not ornament the hills alone, they thrive even on the sea-shore; all strangers go to visit at the Croisette, the Garden of the Hesperides. It contains eleven hundred orange-trees producing sweet fruits of different kinds; nine hundred « chinois; » one hundred and sixty lemon-trees, two hundred and fifty « mandariniers, » twenty cedrats; all these trees are in full productiveness; there are besides ten or twelve thousand orange-trees in nursery; during the summer the trees are watered every twenty days; that suffices to maintain them in all their vigor. « Seventeen years ago I created this garden, said to me its proprietor, M. Aune, and I have never lost a single tree by the cold. »

Most of the orange-trees cultivated at Cannes and the gulf Juan are fine trees whose fruit

is bitter and cannot be eaten, but which furnish in abundance flowers destined to the fabrication of orange flower water, which is forwarded by tins to all parts of the world.

The culture of odoriferous plants and the commerce in the material used for perfumery, has a considerable importance at Grasse and Cannes; a single perfumer of Grasse employs annually 1,160,000 pounds of orange-blossoms.

The roses, cassias, tuberoses, jasmines, violets and orange-trees furnish the best materials of perfumery; with their flowers are perfumed greases and essences to fabricate pomatum, and oils and alcohol to obtain the extracts. Merchants of all nations derive their supplies from this country. By manipulating and adding several products together, they compose the perfumes met with in commerce under such various names.

The extraction of the essences by distillation constitutes an another branch of industry; the following plants are employed for this purpose : oleander, orange-tree, rose, mint, rose-

geranium, thyme, rosemary, lavender, aspic, anise and fennel. It requires over twenty pounds of orange-blossoms, to obtain fifteen grains only of essence, the latter takes the name of « Neroly; » and is employed especially for the fabrication of Cologne water. The city of Cologne buys annually 50,000 francs of it.

The season of the principal harvest of flowers is the spring; the flowers are gathered every morning before their complete expansion.

Of orange flowers over 1,600,000 pounds are gathered annually; of roses over 500,000 pounds; of jasmines, 50,000; of violets, 80,000; of geraniums, 40,000; of tuberoses, 50,000; of cassias, 50,000. This last plant, the cassia (*acacia farnesiana*) gives one of the choicest perfumes; it is sold from 2 to 4 francs a pound; its culture on a large scale is exclusively on the territory of Cannes; because this plant demands not only a warm climate but also a particular soil, the gneiss which we have seen composing the hills of Cannes along the

coast. The district of the « Californie » above the Croisette is almost completely consecrated to this culture.

During the winter, the country is as green as in summer, since the pines, olive-trees and orange-trees occupy the largest part of its surface. At their feet, one can in every season make an abundant collection of flowers, without speaking of those which are the object of a particular culture. In the months of February, March and April a great number of fields of olive-trees are adorned with magnificent anemones of various colors, they are so numerous that a few instants suffice to gather a copious harvest of them.

Since the nature of the soil exercises a great influence on the salubrity of a country. I have made some researches into the geological structure of the environs of Cannes. I had intended to pass rapidly over this subject and to occupy myself very accessorily with it, insomuch as this branch of natural science is little familiar to me; but in undertaking this study, whether by geological excursions, or by reading special

works, I was soon captivated by the interest that is presented by the astonishing variety of rocks which can be observed within a radius of about 20 miles around Cannes. In fact all the strata of the terrestrial crust are represented there, rocks of crystallization and volcanic production, such as micachist, gneiss, granite and syenite, porphyries, melaphyres, serpentines, quartz, trachytes, basalts and volcanic dykes; then coal sand-stone; permian rock; red sand-stone and sand-stone of the Vosges; triassic rock; motley colored sand-stone, muschelkalk and variegated marl, all the strata of the jurassic rock and principally the oolithic system; the tertiary rocks such as gypsum, rough lime-stone, plastic clay and mollasse; finally the rocks of recent formation such as alluvium.

This rapid sketch will give an idea of the geological interest offered by the promenades of Cannes.

A large part of the territory of Cannes is situated on a gneiss rock; the principal roads are stoned with porphyry of the Esterel whose very

heavy dust is not so easily disturbed by the wind as that of lime-stone. On account of this circumstance there is at Cannes much less dust than in the neighboring districts.

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## METEOROLOGY

Meteorology is an entirely modern science; Humboldt, at the beginning of this century, was the first who drew up a chart indicating the distribution of temperatures on the surface of the globe; more recently Maury has drawn the attention of scholars and navigators by his interesting discoveries to the general direction of the winds; he has considerably diminished for sailing vessels the duration of the time necessary to accomplish long voyages by indicating to them the itineraries to be followed in order to avail themselves of the favorable winds.

The observatories of Paris, London and Washington uniting their efforts with a view to continue the researches of Maury, have undertaken the centralization of the documents proper for estab-

blishing a chart of winds and for discovering certain bases calculated to aid the prevision of atmospheric phenomena. A meteorologic system has been also established in Prussia under the direction of M. Dove; another exists in Switzerland; the latter furnishes documents so much the more curious, as in that country of mountains the observatories exhibit in their situations a difference in altitude of more than 7,000 feet. All these works, executed by competent men, are destined to place meteorology on a solid foundation, and to render the greatest services to medicine, because they will enable us to appreciate in a precise manner the influence that atmospheric perturbations exert on the health.

This study is particularly interesting at the winter stations, since there, more than anywhere else are found assembled a great number of invalids seeking in the best climatic conditions the cure of their maladies. Some well-made meteorologic observations to establish the value of each of these stations, and furnish us with the means of comparing them with one another.

Climatology has for the physician a primary importance; it aids him in determining rationally the sort of life patients should adopt, so as to prevent complications and recover health.

It is indispensable for consumptive persons and those affected with rheumatism to breathe a pure air, to live in the sun and to be protected from cold and humidity. At Cannes, more than any-where else, these conditions are found united, but we must admit that while the climate at least presents on the one hand inestimable qualities which particularly characterize it, on the other hand there are some important dangers to be avoided; now to avoid these dangers the invalids must be forewarned so as not to perceive too late the inconveniences inherent to a sudden change of temperature between the shade and the sun, and to the dry or humid character of such or such winds.

I have published in my book on « Cannes et son climat » remarks on this subject, too long however to find a place in this short notice. Nevertheless, I think that an attentive observation

of the three annexed tables will suffice to demonstrate the incontestable advantages of the Mediterranean climate.

These tables indicate the maximum and minimum temperature at Cannes and Paris during the last three winter seasons. It is easy to observe the height of the thermometer for each day in degrees of Fahrenheit, Centigrade or Reaumur at will.— It will be seen that the maximum temperature at Cannes, which corresponds with the hour of promenade of the invalids, is remarkably regular; it attains an average of from 55 to 62 degrees Fahrenheit in the coldest months; so that the patients can go out almost every day and the air of their apartments can be frequently and plentifully renewed. At Paris and London, the external air is in winter too cold and especially too humid; the poor patient is obliged to remain shut up in his room and in an air necessarily vitiated, for no artificial means can effect a complete renewal of the air of an apartment whose windows rest closed.

But there is a still more important question

than that of temperature. I speak of humidity and light. — Compare the lines which indicate in the tables the quantity of rain falling at Cannes and Paris, and you will see that in the first of these places, the rains furnish considerable quantities of water, but are rare and do not last long. At Paris it rains three times oftener, and whole days of these fine, cold and penetrating rains are required to supply an insignificant quantity of water.

Finally the state of the sky, which is indicated for each day by four little black or white squares according to the circumstances, proves a prodigious advantage in favor of Cannes. At Paris the sunny-days are the exception, at Cannes they are the rule; and the rays of the sun possess such a great caloric power that it is frequent to see the thermometer rise in the sun to 100 and 115 degrees Fahrenheit. Thus one Christmas-day 1867 we noticed that the thermometer was marking 101 degrees; in the course of the same month it frequently rose higher.

In a word, the winter climate of Cannes is re-

markable: — 1<sup>st</sup>. by the elevation and regularity of the temperature at the hour of the patient's promenade; 2<sup>d</sup>. by the clearness of the atmosphere, and the abundance of light; 3<sup>d</sup>. by the heat of the solar rays; 4<sup>th</sup>. by the rarity of rain; 5<sup>th</sup> by the absence of cold humidity, and fogs.

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TABLES  
OF  
METEOROLOGICAL OBSERVATIONS  
SHOWING THE COMPARATIVE TEMPERATURES, RAINFALLS AND  
DEGREES OF CLEARNESS OF THE SKY, AT  
CANNES AND PARIS

During the winter seasons 1865-66, 1866-67, 1867-68.



## TABLE 1 TEMPÉRATURES MINIMA ET MAXIMA ÉTAT DU CIEL

PLUIE Observations recueillies à PARIS (Observatoire Impérial) et à CANNES (Dr de Valcourt) 1865 66

## TEMPÉRATURE STATE OF THE SKY RAIN

TEMPERATUR ZUSTAND DES HIMMELS REGEN

Décembre 1865

Janvier 1866

Février

Mars

Avril

## Explication

- Maxima Cannes
- Minima Cannes
- Maxima Paris
- Minima Paris
- C Thermomètre Centigrade
- F id Fahrenheit
- R id Réaumur
- mm Millimètres
- inh. English inches
- Pluie, Rain, Regen
- Ciel couvert, Cloudy, Wolzig
- Soleil, Sun, Sonne

Les indications concernant la pluie et l'état du ciel sont indiquées pour Cannes en haut, pour Paris en bas du tableau.

The relative degrees of clearness and the quantity of rain at Cannes and at Paris are shown at the top and bottom of the table.

Himmelzustand und regen sind für Cannes oben, für Paris unten gezeichnet.





TABLE 2    TEMPÉRATURES MINIMA ET MAXIMA    ÉTAT DU CIEL  
TEMPERATURE    STATE OF THE SKY    RAIN



PLUIE    Observations recueillies à PARIS (Observatoire Impérial) et à CANNES (Dr de Valcourt) 1866-67  
TEMPERATUR    ZUSTAND DES HIMMELS    REGEN



TABLE 3 — TEMPÉRATURES MINIMA ET MAXIMA — ÉTAT DU CIEL — PLUIE — *Observations recueillies à PARIS (Observatoire Impérial) et à CANNES (D<sup>r</sup> de Valcourt) 1867-68*



